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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/978,091	10/17/2001	Katsuya Ito	2356/9	4370

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EXAMINER

BISSETT, MELANIE D

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/978,091	Applicant(s) ITO ET AL.	
	Examiner Melanie D. Bissett	Art Unit 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4-5</u> . | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Summary of the Claims

1. Claim 1 is drawn to a heat shrinkable polyester film having a specific brightness and permitting adhesion with a solvent. Claim 19 is drawn to a heat shrinkable tube made by adhering the film of claim 1, and claim 20 is drawn to a container made with the film of claim 1. Claim 21 is drawn to a method of producing a heat shrinkable polyester tube by applying a specific solvent to a splicing area of a film of claim 1, splicing the film at a certain temperature, and drying the film to give a tube. Claims 2-6 further limit the voids and porosity of the film, claims 7-10 and 13-14 limit specific properties of the film, claims 11-12 limit the film to contain fine particles, claim 15 limits the polyester composition, claims 16-17 limit the thickness of the film and its layers, and claim 18 limits the film to comprise a print on at least one surface.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-7, 10-13, and 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Ito et al. Ito et al. (US 5,422,175-A) can be found on the applicant's Form PTO-1449.

4. Ito discloses a void-containing composite film containing a void-containing polyester layer and at least one surface layer of polyester, where the void-containing layer comprises a polyester and an incompatible thermoplastic resin (abstract). The examples show thermal shrinkage and show whiteness values greater than 70 (Tables 2, 4, 6, and 10). It is the examiner's position that the reference's "whiteness" values are equivalent to the claimed "brightness" values, since both are measured by the same testing method. Also, since the applicant compares insufficient brightness to transparency, it is the examiner's position that a material having improved "whiteness" would be increasingly non-transparent. It is also the examiner's position that the polyester films of the reference would inherently permit adhesion by a solvent, since the films are made of similar materials and have similar physical properties (including surface roughness) to those of the applicant's examples (see reference examples; Tables 2, 4, 6, 10).
5. Regarding claims 3-7, Ito teaches drawing polyester films containing incompatible thermoplastics in two directions (example 1). Example 1 shows a void-containing base layer between two polyester surface layers, where the base layer has a void content at the surface of 7% by volume and the composite film has a void percentage of 37% by volume. The surface roughness of the film is 0.25 μm (Table 2). Thus, the base layer A has voids composing at least 7% by volume, where the total average of 37% by volume suggests that layer A has an even higher void percentage. Ito suggests that polyester layer B has fewer voids than the base layer A in Figure 1, where clear voids are displayed in the base layer but no voids are shown in layer B.

Also, Ito describes how fine particles of incompatible resin are used to form the voids in the base layer (col. 11 lines 27-64). The lack of incompatible resin particles in the surface polyester resins B of Example 1 suggests that the surface layers have little or no porosity.

6. Figure 1 shows a base layer containing voids having a surface A having fewer voids and having a layer B on the opposing side. Where the reference shows surface roughness for layer B of 0.2-0.35 μm (Table 2), it is the examiner's position that the opposing surface A would have a different surface roughness fitting the applicant's claim 10. One of ordinary skill in the art would expect a surface having few voids and having no added inorganic particles would have a roughness different than that of a layer having inorganic particles of a 0.3 μm particle size.

7. Regarding claims 11-13, example 1 shows the use of titanium dioxide having a particle size of 0.3 μm in an amount of 5% by weight of the layer B. Estimating by the thicknesses of the layers, the surface layers comprise $2 \times 30 \mu\text{m} / (30 \mu\text{m} + 30 \mu\text{m} + 440 \mu\text{m}) = 12\%$ of the film, giving a TiO_2 amount of $0.05 \times 12 = 0.6\%$ TiO_2 present in the film. The specific gravity of the film is 0.82 (Table 2).

8. Regarding claims 15-18, the film of example 1 suggests an overall thickness of 50 μm , where each layer B has a thickness of 3 μm , giving a thickness ratio of A:B = 16.7 (Table 1). Ito suggests the films as printable on the surface (col. 14 lines 37-43; col. 1 lines 6-10) and suggests neopentyl glycol as a component of the polyester (col. 3 lines 32-45).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 8-9, 14, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al. in view of Toyo Boseki. Toyo Boseki (EP 1145846-A2) can be found on the applicant's Form PTO-1449.

11. Ito applies as above, also teaching the films having light transmittance values under 30% (Tables 2, 4, 6, and 10). The films are used for labels, posters, wrapping paper, etc. (col. 1 lines 6-10). However, the reference does not show thermal shrinkage values fitting the applicant's claimed range and does not show the films in tube form used for containers. Toyo Boseki discloses heat-shrinkable polyester films for labels, where the films have a heat shrinkability of 50-75% in the main direction and 1-7% in a direction perpendicular to the main direction (p. 3 lines 42-53). The heat shrinkage values are important in forming labels for bottle necks, where values less than 50% in the main direction show insufficient shrinkage for bottle necks, and values outside the range for the perpendicular direction create problems with wrinkles. The reference teaches choosing a polyester material to fit the desired shrinkage finish (p. 3 lines 54-58). Toyo Boseki also teaches forming tube shapes by bonding the ends of the film with 1,3-dioxolane (p. 7 lines 53-57; p. 4 lines 1-2; p. 5 lines 2-10). Thus, it is the examiner's position that it would have been prima facie obvious to form a label for bottles by using

materials having the heat shrinkage values taught by Toyo Boseki, bonding the ends by solvent to form a tube, and shrinking the label to fit the bottle neck. Motivation would have been to form labels having sufficient shrinkage to fit certain applications such as bottle necks without wrinkling.

12. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Isaka et al. in view of Ito et al. Isaka et al. (US 4,963,418 A) can be found on the applicant's Form PTO-1449.


13. Isaka discloses a thermo-shrinkable polyester film, where a tube is produced from the film by spreading a solvent having a solubility parameter of 8.0-13.8 onto a joint surface of the film, joining the surfaces of the film to form a tube, and drying the tube (col. 4 lines 15-46). Since heating the solvent or film is not mentioned, one skilled in the art would clearly envision splicing the film surfaces below 70 °C. However, the reference does not mention the brightness of the film used. The examples show the inclusion of silicon dioxide in the polyester film (example 5). Ito discloses polyester films for label applications having whiteness values greater than 70 (Tables 2, 4, 6, and 10). Titanium dioxide is included in the polyester films to supply sufficient whiteness (col. 8 lines 55-62), where films having even opacifying effect and whiteness have higher commercial merit (col. 8 lines 3-9). Therefore, it is the examiner's position that it would have been prima facie obvious to include titanium dioxide in the polyester films of Isaka's invention to improve whiteness of the film, thus improving the commercial merit of the film.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie D. Bissett whose telephone number is (703) 308-6539. The examiner can normally be reached on M-F 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (703) 308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

mdb
February 14, 2003


James J. Seidleck
Supervisory Patent Examiner
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